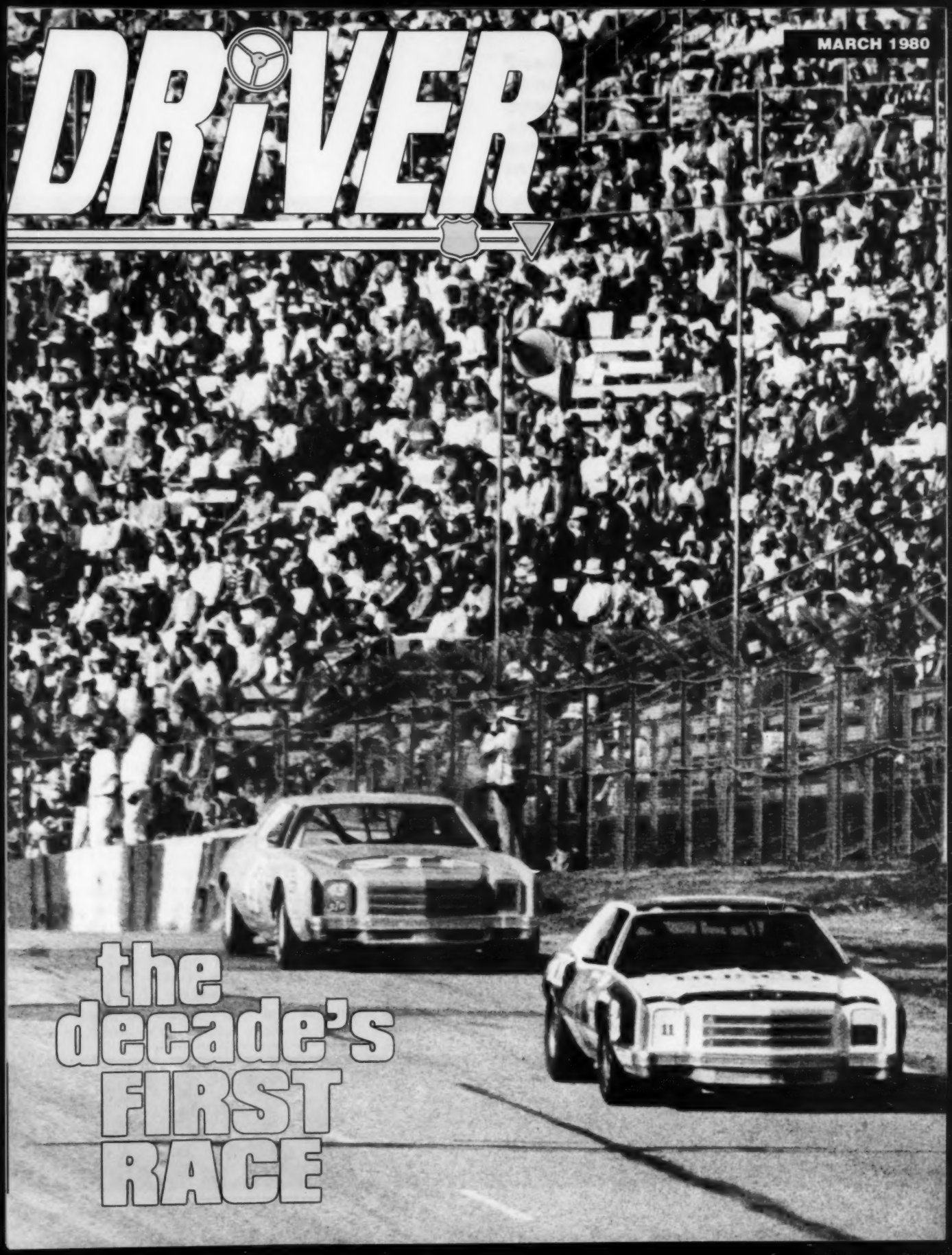
DRIVER

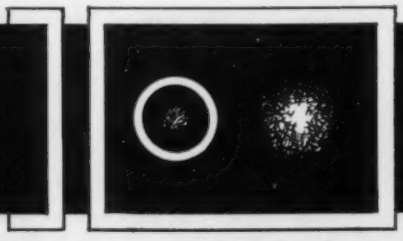
MARCH 1980



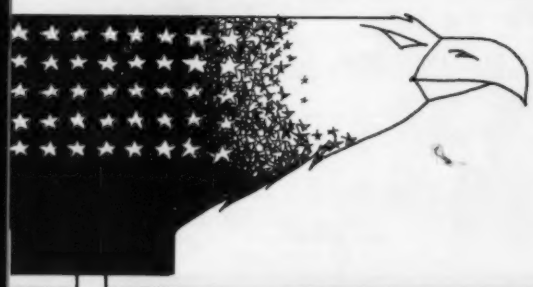
the decade's FIRST RACE

DRIVER

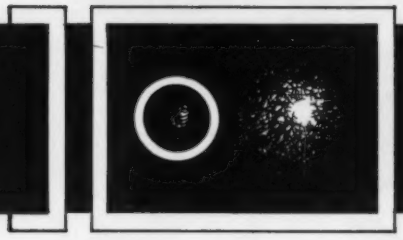
Neither occupant of this truck was injured when it skidded off the road and overturned, crushing the cab. Both people were wearing their seat belts. See situation No. 1.



Does it take an actual accident to convince people that their seat belts will save them from death or serious injury?



SAVED by the BELT



It's true. Seat belts do save lives, and they do minimize injuries. But only if they're used. How many people use their seat belts? The National Highway Traffic Safety Administration cites a figure of 14 percent. Other sources give figures that are higher, but still well below 50 percent.

Despite these figures, we can find many examples of seat belts doing their job, in reports of government motor vehicle accidents.

Government regulations state that occupants of government vehicles must buckle their seat belts before the car is put into motion. (Among the regs are DODI 6055.4; T.O. 36A-1-6; and AFRs 127-5, 125-14 and 125-15, if you're interested.) Obviously, the existence of a regulation is no guarantee the occupants of the automobile will comply and buckle up. However, the reg increases the chances, especially when there's a sticker on the dashboard telling the riders to do so.

We're giving you these examples of GMV accidents in the hope that you can learn from the experience other people have had, that *personal* experience is not necessary.

These examples all have happy endings; the people were wearing belts and suffered only minor injuries or came out completely unhurt. Vehicles can always be repaired or replaced. If people wear seat belts, as were the ones in these accidents, "repairing" those people becomes easier, and "replacing" them is less likely to be necessary.

Two airmen were driving in an Air Force pickup truck. They entered a left curve, traveling too fast, and the truck went into a skid. The driver tried to control the truck but failed. It went off the left side of the road and overturned, resting on its top. The cab was crushed (see photos on opposite page). The truck cost $4400 to repair.

Both of the airmen were wearing their seat belts. Neither was injured.

continued

DRIVER

THE
TRAFFIC SAFETY MAGAZINE
FOR THE MILITARY DRIVER

DEPARTMENT OF THE AIR FORCE
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MAR

VOLUME 13 NUMBER 10

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THE EDITOR SPEAKS DOUBLE CLUTCH

OUR SLIP IS SHOWING

If we didn't need the turkey who wrote "How Much Is It Really Going To Cost?" in the January issue to make morning coffee and move desks, we'd have him shot. We may at least audit his coffee fund.

On page 15 he started saying that a $6,000 loan at 16 percent for 42 months was going to cost $10,465.40, with similar numbers for 12 and 9 percent. WRONG!

Checking figures earlier in the article will show that the payments for that loan are $187.50 per month for a total of $7,875. The correct total payment figures for the 12 and 9 percent loans respectively are: $7,377.30 and $7,021.14. That makes the 12 percent loan $497.70 cheaper than the 16 percent loan and the 9 percent loan $356.12 less than the 12 and $853.86 less than the 16.

The writer's heart was in the correct place and the tenor of his story was right-on, but his clumsiness with a calculator is surpassed only by his inability to spell. Actually the figures he quoted are go for a certain financial formula, but we had enough trouble understanding the Technical Editor's explanation of the last formula he published without adding another to the list.

Let's just say that the chart and its use are correct. And we'll add that although some figures in the story are wrong, the idea about the total costs of a loan strikes home.

continued

2.

An Air Force member was driving a van with three passengers on a wet road that was too narrow for two-way traffic. As he rounded a bend, the driver was blinded by sun reflecting off the pavement. He put down his sun visor and put his hand up to shield his eyes. Then he saw a 5-ton truck stopped in the roadway ahead of him. He braked, but it was too late to avoid the truck. The van was smashed at the front on the driver's side. Cost to repair it was $2450.

All four of the passengers wore their seat belts. One passenger was injured, but he missed only two days' work.

3.

An Air Force member was driving a 2½-ton refrigeration truck on a highway with two passengers. The driver tried to pass a slower-moving jeep, but the jeep came left across the center line, and the Air Force driver lost control of the truck while trying to avoid a collision. The truck went onto a soft shoulder and rolled. The truck was extensively damaged and required over $11,000 for repairs.

All three people in the truck were wearing belts. The driver received bruised ribs and other bruises and cuts serious enough to lose 13 days' work. One passenger had a bruised elbow and the other had bruises and internal injuries.

continued

4.

Two Air Force members were driving a truck when they accidentally went onto the low right shoulder of the road. The driver, trying to get the vehicle back onto the road surface, over-corrected. The truck went completely across the road and off into the ditch on the opposite side, rolling and landing on its top. The cost to repair was over $5700.

Both members had their belts fastened. The driver suffered a broken knee, and the passenger was uninjured.

5.

An Air Force civilian and a military member were in their ambulance with lights and siren on, responding to an accident. They were headed south and came to an intersection with a red light. They pulled into the northbound lanes to go through the intersection. Another civilian, driving in a westbound car, failed to stop for the ambulance and the two vehicles collided in the intersection. The ambulance suffered $1700 damage, and the civilian car $3500.

All three people were wearing their seat belts. The ambulance driver was uninjured, and the Air Force member suffered bruises on his back and cuts on his right foot. The civilian had body bruises.

6.

Two members were driving in a van on an asphalt road when they encountered fog and road ice. As they came down an incline, they ran over a patch of ice that caused the vehicle to fishtail. The driver steered into each swerve, trying to straighten the vehicle. He finally lost control of the vehicle and it went down a 30-foot bank, rolling over twice in the process, and landed right side up (see photos). The vehicle took $2200 to repair.

This vehicle rolled over twice after skidding on ice. One occupant had a strained back; the other was uninjured. Both were wearing belts. See situation No. 6.

The two were wearing belts. The passenger suffered a lower back strain. The driver was uninjured.

7.

An Air Force member was driving a small pickup truck in the left lane of a divided highway. Another vehicle passed him in the middle lane, and swerved into the member's lane. The member swerved left to avoid a collision, lost control of the pickup and hit the guardrail in the median. The Air Force vehicle was totalled.

The driver, who was wearing his seat belt, suffered a broken nose and a cut lip.

8.

Two Air Force members were driving a van on an icy road when a dog crossed in front of them. The driver steered to the right to avoid it, and applied the brakes. At this time, the left front tire of the car hit an ice rut in the road and it began to skid. The

continued

voice of experience

Experience is one thing, and the examples we've cited are convincing in themselves. But the people who had these experiences—what do they think? Here are a few quotes from people who were "saved by the belt."

A senior airman: "The accident made me a believer that seat belts do save lives. I never really used them too often except in government vehicles. But after this accident, I use them at all times—government and civilian vehicles alike. I can honestly say that seat belts prevented serious injuries."

A recruiter: "I was escorting an applicant to a bus station . . . I noticed a blue truck slowing down in front of me, approaching me in the other lane. The truck took a left turn about 20 feet in front of me. I was wearing a belt; the applicant was not. I am convinced the belt saved me because I felt myself brush across the steering column."

A technical sergeant: ". . . On the way back, I lost control, careened into a ditch, with the vehicle resting on its top. I received a fractured knee; the airman received no injuries at all. I personally feel that if we had not had our belts fastened—both shoulder and lap—we would have encountered great injuries judging by the damage to the truck. I know I will always wear seat belts."

This van was airborne in an accident, and it rolled several times. It was totalled. The occupants received only minor injuries. They were wearing their seat belts. See situation No. 8.

driver steered into the skid, but the ice ruts caused the car to bounce around and the driver overcorrected and went into the opposing lane of traffic. He steered back to the right and the car hit built-up snow on the right side of the road. The car became airborne, and rolled several times on impact. It came to rest upright, with the left rear wheel off and extensive body damage. The vehicle was a total loss (see photo).

The members had their seat belts on. The driver had a cut on his forehead. The passenger suffered a cut on his right knee and a slight injury to his left ankle.

9.

An Air Force member was driving in rush hour on a city street that intersected with a highway. He stopped at the stop sign and waited for a space in traffic to make a left turn. When he saw a space, he started the turn, but his vehicle was struck on the driver's side by a car traveling on the highway. The Air Force vehicle suffered $1000 damage.

The Air Force driver was wearing his belt. He suffered bruises over his body and lost four work days.

10.

An Air Force member and his civilian passenger were driving on a road in heavy rain. Coming from the opposite direction was a civilian car with its headlights on high beam. The member flashed his lights to get the other driver to lower his beams. The civilian car had stopped in the roadway because of poor visibility and was preparing to make a right turn onto a small highway turnoff. As the Air Force car approached, the civilian car started across the center line toward it. The Air Force driver veered to the right to avoid collision and went off the road. As he swerved back to the right to get back on the road he collided head-on with the civilian car. The Air Force vehicle was a total loss.

The occupants of the Air Force car were wearing belts. The driver had a broken nose and cuts and bruises to the head. The passenger had a concussion and a bruised elbow.

We have presented these accidents not to fix the blame on anyone, but to credit a simple harness of nylon webbing with saving a number of lives.

The bottom line is that you owe it to yourself to make use of these devices. And you have nobody to *blame* but yourself if you don't. Try to learn from the experience of others.

DRIVING IN THE SPRINGTIME

That little poem that begins "March winds and April showers" doesn't really give you much idea about what spring is like. Spring is one of those times of year that nature can't seem to make up its mind—"Should I warm up and dry up, or should I keep dumping stuff out of the sky?" Or maybe it just likes to keep you guessing.

Just the time you think it's warmed up for good, a surprise snowstorm will drop buckets of slush and wet snow on you. You're left with two choices: Either gripe and grumble your way through the season or stay loose and be prepared for the surprises.

Mostly, spring is the time of year for water, in just about any form from mist to ice. Your vehicle is not equipped for water sports, unless you drive an amphibious tank. But the excess moisture needn't cause you too much concern, because we're here to tell you how to handle it as you drive.

Fog: We'll begin with fog. You won't have to face fog everywhere in the country, but chances are you'll be stationed at least once in your career where it occurs, so pay attention.

Why? So they use it in movies to give the landscape a spooky quality, so what? It's just a cloud at ground level, and it's therefore just a lot of water droplets, right? Ah, but here's where the surprises come in.

They weren't kidding when they told you about things disappearing into, or coming suddenly out of, a fogbank. Even if you've never been in fog before, you've probably been in an airplane

(above)
A passing truck or car will invariably spray your car with water. It might be bucketsfull, or just a fine, dirty spray, but whichever it'll blind you for a couple of seconds. Memorize the location of the switch for the wipers.

(left)
Your brakes stand a better-than-even chance of getting wet when you drive through a puddle. If driving through water is unavoidable, keep one foot lightly on the brake to keep the brake linings dry.

...of puddles and potholes

that went through a cloud. Sometimes you were lucky to see the end of the wing. Get the idea?

Because of fog's ability to hide things—cars, trees, even the road—the first thing to consider is whether you can put off your trip. Can you wait until the fog lifts and visibility improves? No, we're not kidding. Fog is nothing to take lightly. When you drive in fog, you can never be sure that the stuff won't thicken so much you can't see 20 feet in front of you.

If the fog hits when you really must drive, be especially careful. Drive slowly and be extra alert. Use your headlights—even in the daytime. This is not so much to help you see (because they won't help much, at least in the daylight), as to let others see you. Your headlights (or taillights from behind) will signal your presence to other drivers.

You might be tempted to use your high beams to see better. Don't. You'll only dazzle yourself and the other drivers as the high beams reflect off the water droplets in the fog. However, if you have fog lights, use 'em. That's what they're for.

As we were saying, drive slowly. You don't know what's ahead. It might be a slower-moving car without its lights on, or it might be a stalled car . . . it might even be a wreck. Rear-end collisions are very common in foggy conditions. Also very common is running off the road. The road might take a sudden bend, and the fog might have obscured the road sign.

If the stuff is so bad that you can't drive safely, consider getting off the road until conditions improve. If you do that, get *far* off and use your emergency flashers. If you just leave the lights on, other drivers might mistake your position for the road and follow your lights right off the pavement.

Lowlying roads may be flooded or even completely washed out. Not even a good spot for fishing, much less driving.

Speaking of following someone, remember your following distance. In fog, even if you can see markers well enough to apply the two-second rule, it may not leave you enough space because it's difficult to tell what the guy ahead is doing. Keep well back and be ready to stop.

Likewise, don't pass anyone in thick fog.

While you drive, run your defroster and windshield wipers to eliminate the moisture that collects on the glass—inside and out. Clouded windows may make it look foggier than it really is.

Rain and slush: You may not have to deal with fog, but you'll probably have to face rain a few times, and those spring storms that are about 50-50 rain and snow. These are better than fog in some ways and worse in others.

The visibility will be better with rain, but you'll also have some of the slickest streets this side of glare ice. Dark clouds and dense rain will make it necessary to use the lights once again in the daytime.

As if that weren't enough, water on the road hides the lane markers and turn arrows that are painted on the pavement, and it creates a glare problem from reflected headlights. Are you sure you wouldn't rather stay home and watch TV? (By the way, the Back-

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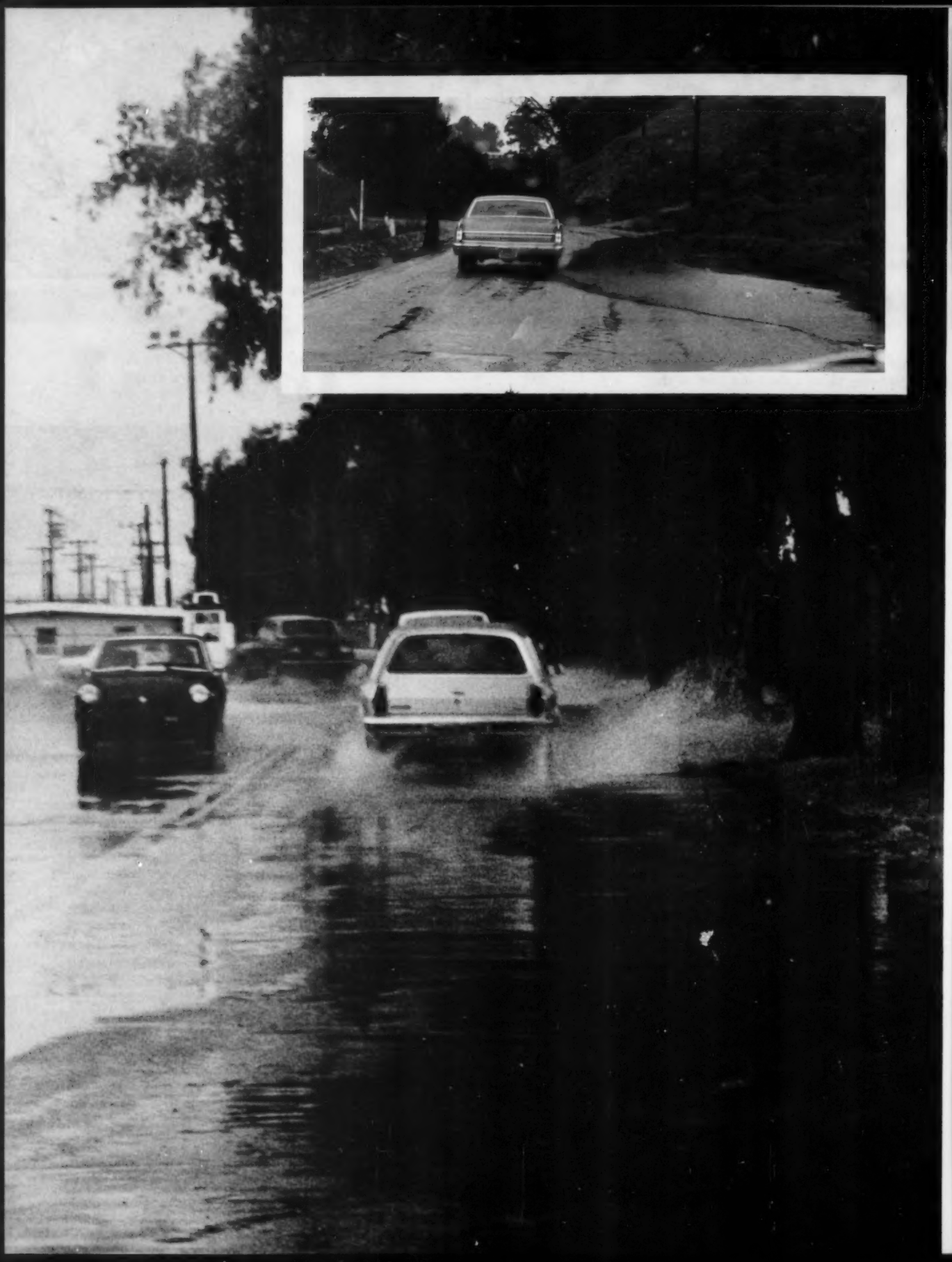

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(left, inset)
When you leave your lane to avoid a puddle, make sure you're not moving into the path of any other traffic.

(left)
Standing water on the road will sometimes hide the painted lines that divide lanes or mark speed limits. Sunshine or headlights shining on the water can create a terrific glare, too.

yard Mechanic dealt with installing and aiming headlights and foglights in the February 1980 DRIVER.)

But back to slickness. Your best friend here is the tread on your tires. If you think the tread provides you with traction for all road conditions, you'll be surprised to know that it is designed for wet roads. Racing fans will tell you that you get better traction from a treadless "slick" on dry surfaces. The tread is there to provide channels through which the water can pass as you drive over it. Otherwise, the water would build up in front of the tire and you would begin to "hydroplane," a subject we'll cover later.

Here's another chance for us to tell you to watch the condition of your tires and to replace them when they become worn. Which we just did.

Okay, so once again, drive slowly. In fact, don't do anything fast. Sudden lane changes or turns might put you into a wet skid and make life a lot less pleasant for you.

You can't control every factor of driving, so even if *you* are being a good guy, that doesn't mean some other bozo won't speed. Then he'll drive through that puddle you're edging around, and he'll splash it all over your windows. If it's raining you've probably got your wipers on and they'll clear the glass off in a second. If they aren't on, you've just been blinded for the time it takes to get them going.

When that happens, and believe us it will, slow down until you can see clearly again. Just ease off the gas pedal, and brake lightly if you need to. Don't *stomp* on the brake, and by all means don't change lanes while you can't see. That could set up an accident.

Standing water: Remember that puddle you were going around (staying in your own lane, of course)? You were right to avoid it if you could. For two reasons: You don't know how deep it is, and there might be a chuckhole hidden by the water. You'll find a discussion of chuckholes (or "potholes") elsewhere, but think about deep water for a second.

You could very easily get your brake pads (or linings) wet driving through a puddle. Try to grip something with wet hands and you'll know how your brakes are working when they're wet. Wet brakes on one side of the car could spin the car around, and wet brakes on both sides could mean you won't stop at all.

So avoid the puddle if you can. But if there's no way around it, just apply the brakes lightly as you go through the water. Right foot on the accelerator, left foot on the brake just enough to create a little friction and keep the linings dry. (By the way, this is the *only* time we advocate driving with one foot on the brake. If you drive that way habitually, you only wear out your brakes faster—*much* faster.)

For really deep puddles, there's only one solution—go around. If you go through, you'll find an entirely new meaning for "flooding the engine."

One step up from standing water is *running* water. When you see water running across a road, go around.

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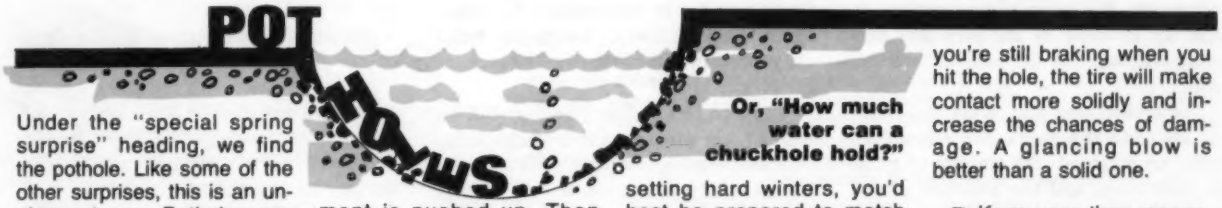


Or, "How much water can a chuckhole hold?"

Under the "special spring surprise" heading, we find the pothole. Like some of the other surprises, this is an unpleasant one. Potholes can damage tires, wheel rims, suspension, and they can throw the car's front end out of alignment. (They can also cause you excessive muscle tension and possible tooth damage as you run over them, but that's another story.)

Potholes appear without fail every spring (and sometimes during the winter) in asphalt roads; they're just part of the damage that winter does. They occur this way: Water gets under the pavement through a crack or by seeping down at the pavement's edge. When the ground freezes, the pavement is pushed up. Then when the weather warms again, the soil thaws and the water in it soaks deeper into the ground. This leaves a pocket under the pavement that breaks through when a car runs over it. Voila! One brand-new pothole!

It usually takes a few days or weeks until the road crews can repair them all because there are so many. The road builders estimate that all the potholes in the U.S. combined would make a crater one quarter-mile in diameter and 50 feet deep. Imagine driving off into *that*.

As many parts of the country continue to get record-setting hard winters, you'd best be prepared to match your driving to the road surface and minimize the damage from these little ruts.

Here are a few hints:

■ Avoid hitting a pothole if you can. You don't really want to know how deep it is. But watch for other cars too, so that you don't swerve away from the hole only to hit a car. A five-inch pothole will do less damage than a 1½-ton sedan.

■ Slow down. You hit a lot harder if you hit it fast, and that will increase your odds of damaging the car.

■ When slowing, do so *before* you hit the hole. If you're still braking when you hit the hole, the tire will make contact more solidly and increase the chances of damage. A glancing blow is better than a solid one.

■ Keep your tires properly inflated. Tires that are inflated to the proper pressure are less prone to accidents and "injury." That's why they have a recommended pressure for the tire. Check your owner's manual

Check your car over often if you have to drive over roads with a lot of holes, and have it repaired immediately if you notice any vibration or shimmy. These could be evidence of a front end that is out of alignment, and that could cause your tires to wear out faster. And that would be a *really* unpleasant surprise for your finances.

of puddles and potholes

continued

Find another route to your destination, go home and read the papers, whatever. Don't drive through it. There might be enough of a current to wash you right off the road, even if the water isn't very deep. And if the road itself is washed away, beware. Any water that can tear away asphalt or concrete is nothing to trifle with.

Lightning: While we're on the subject of rain, let's remember another hazard of the rainstorm—lightning. As we mentioned recently in these pages, you are safer in your car than outside in a lightning storm. If a lightning bolt were to strike your car it would probably travel along the car body and then jump to the ground.

If you find yourself in your car during a lightning storm, don't touch any metal inside—that could make you a part of the electric circuit. If you're outside get inside a car or a building. And keep away from water.

Hydroplaning: We promised you we'd talk about this, so here it is. Many of the dos and don'ts in this article (if you don't "do" or do a "don't") will add up to create a hydroplaning situation.

This is what we mean. Hydroplaning occurs when the car's weight is supported by water as you drive. It's a little like water-skiing. The faster you move, the more water pressure is built up in front of the tires and this water will actually lift your car off the road.

The factors that will affect this process are the car's speed, the amount of water on the road, the amount of tread on your tires, and the inflation of the tires. The more speed and water, and the less tread and inflation, the more likely you are to hydroplane. So, once again: Drive slowly, watch the tread on your tires, and keep the inflation at the proper level.

The odd fact is that you may not be able to tell when you're hydroplaning. (Another spring surprise!) You could be traveling along on a wet street, begin to change lanes and then skid across three lanes or do a 180-degree spin or slide off the road. We consider it a rule: Wet roads equal slower driving.

So now you know a few more tips on safe driving during this season of changeable weather. We hope they'll help you make it through until nature decides to turn the sun on for the best driving weather—summer.

Fog will leave moisture like this on the windows—inside and out.

What condition are your car's wipers in?

bility, Visi- & Sta-

You regular readers know the periodic maintenance we remind you of: Tune-ups, oil changes, and the like. Here we'll just deal with a couple of items that affect safe motoring in wet weather—visibility and stability. The first involves the windshield and its wipers and the second involves the tires and brakes.

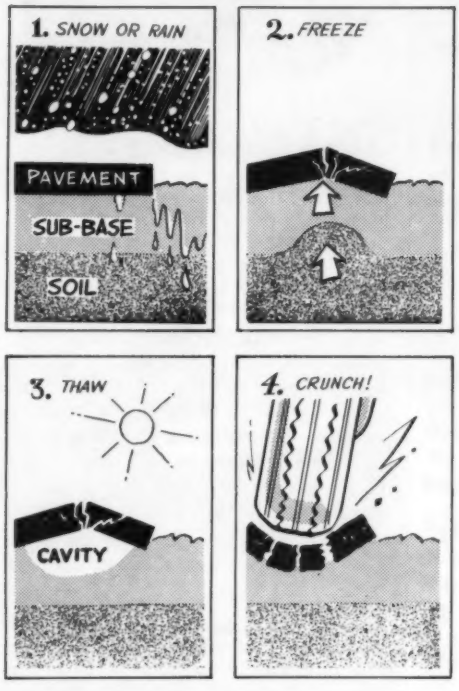
The mud and dirty water you encounter in spring will undo hours of work with a rag and a can of paste wax. The Backyard Mechanic this month tackles the subject of general appearance care for the car, so here we'll limit ourselves to the windshield.

To see out, you have to be able to get that slop off the windows and keep it off. So, what condition are your windshield wipers in? Winter gave them ample opportunity to be frozen by ice and then thawed by your defroster dozens of times. This kind of life is short and unpleasant for the rubber blades on the wipers. They get dry and crack, and then they streak the windshield rather than clean it. Check them out. At the first sign of a streak, chuck 'em and buy some new ones. It may be wise to change them every six months as a rule. But if you don't feel that rich, just keep an eye on them.

Next, the windshield washer solution. You may need more

Is there enough water here for the car to go hydroplaning? The answer depends on the car's speed, the condition of its tires, and the inflation pressure inside them.

Hitting potholes like this one at high speed can severely damage your car's tires.



Try to avoid hitting a pothole if you can, but don't swerve into the path of other cars.

(left)
What causes potholes?—(1) Rain, sleet or snow works its way into the soil under the pavement. (2) When the temperature drops, the water freezes and expands. This pushes up the soil and pavement. (3) As thawing occurs, the water runs away and the soil recedes, creating a hole under the pavement. (4) A passing car or truck breaks the pavement, causing the familiar pothole. Tires can be seriously damaged by striking a pothole.
(Tire Industry Safety Council, Washington, DC 20045)

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of this stuff now than you did in winter, so keep the reservoir full. Use the regular nonfreezing solution that you use in winter rather than just plain water. It does a better job of cleaning, and you never know when you might get one of those freak spring snowstorms that will ice the world up for a day or so.

For the other windows, you should keep a spray bottle of window cleaner and some paper towels in the car. That makes it much easier to clean off the windows when you're not at home, and it helps you remember to clean off the *inside* of the windshield to get rid of that film that develops there. This cleaner stuff works great on the mirrors, too. (And the headlights.)

Now that you've done as much as you can to keep the portholes clean, let's move on to the stability part.

We've given you the real truth about tire treads elsewhere, so we won't repeat it here. But we will remind you that you need to be sure of the amount of tread. Good tread helps your stability on wet surfaces and helps you avoid the danger and fear involved with hydroplaning, which we also mention in the main article.

Now some advice on keeping your tires properly inflated: Keep your tires properly inflated. Underinflated tires will also contribute to the danger of hydroplaning. One of those pencil-type gauges will work very well.

Your stability is also affected by the alignment of your front wheels. Winter has probably thrown the alignment off, so have them checked. It's a good thing to do every year, anyway.

If your front end is misaligned, your braking will definitely be thrown off as well. So it's just as well to check brakes, too. You can't have the car braking more heavily to one side on wet roads—stability is hard enough with everything in line. Make sure the brakes apply evenly on both sides.

tteecchh!!
DOUBLE TECH Q A

By TSgt RON LATHROP

I would like to tow my Japanese-built sports car with my van. I noticed the following warning in my parts catalog: Do not tow another vehicle with this tow bar using a van or pickup because this is an unstable condition. Is this only a problem with this particular tow bar, or is there a reason not to tow a car with any van using any tow bar?

The problem is not limited to just one tow bar, but is the result of two basics. The primary difficulty comes from the large angle created by the ball being mounted so high and the tow bar attached so low. This excessively large angle won't provide the stability necessary in towing. A drop ball on the towing vehicle might relieve a portion of the hazard, but there is the second basic problem to consider. The second problem involves the turbulent air that flows from under a van or pickup. This air can actually lift the vehicle being towed from the road and pitch it about. This is especially true for vehicles such as yours since its wing-shaped body already requires a front air dam to keep it firmly on the road when dealing with undisturbed air.

I have found that when driving a car in snow and ice, if a zig-zag pattern is used, going at slow speed, a vehicle can get up hills further and faster than simply going up a hill at a slow speed. Needless to say there are less knowledgeable drivers left stranded at the side of the road. How about that?

In my book you've been lucky so far. I do NOT recommend the zig-zag pattern for driving on any slippery surface, especially snow and ice. It is important to avoid any motion that is not absolutely necessary when driving in adverse weather conditions. This includes turning the wheels, shifting gears, using the brake, shifting to neutral, tapping the gas pedal. . . . The possibility of losing control because of an unnecessary move is too great. Because the car wants to go straight ahead, you'll get the most progress out of any situation by allowing it to follow its natural course. Furthermore, if the road is cambered, rounded, banked or there is a wind, the possibility of sliding completely off the surface increases with the zig-zag pattern.

Similarly, many people recommend driving on the gravel shoulder of a road to get up an icy incline. This only works for the first few vehicles to attempt it. After they have used the shoulder, it too becomes as smooth as glass.

Although the tracks left by other cars in the snow are generally the slipperiest portion of the road, they are the best place to drive. Since the deep snow to the sides of these tracks can catch the wheels and pull the vehicle in a direction you don't want to go, it is better to carefully follow in the tracks of others than to flounder on your own.

I'm going to go a step further and reply to another common comment about shifting to neutral when trying to stop a vehicle on ice or regain control in a slide. Unless you can be absolutely certain that you'll find neutral immediately, don't move that automatic gear selector. If you get reverse instead of neutral you'll be in a world of hurt. If you get another gear, you'll not only waste more time looking for neutral, you may take your eyes – and mind – off the road and end up in serious trouble. Besides the braking action of the transmission is of some help. Those of you with a stick shift may, of course, declutch. With an automatic it is better to just take your foot off the gas (diesel?) pedal.

The bottom line on winter driving? Read the annual special section of DRIVER on winter driving usually printed in October. It will contain *all* the latest tips. If it's not there, it usually won't work every time for everyone.

I'm using a synthetic motor oil that says it meets an API service index, but you didn't mention it in your article. Is it good stuff, or should I drain it right away and go back to a natural Pennsylvania oil?

The September 1979 DRIVER synthetic oil article was a reprint of an April '78 DRIVER article and there were very few synthetics around when the article was first written. The synthetic oil market is in an early growth stage at this time and the number of brands entering competition daily is staggering. Furthermore, we don't test or endorse any product. We leave that to the experts such as API. Since it meets API standards, what can I say?

Which moped got the 200 mpg mentioned in your article and where can I get one? Most mopeds I have seen hover in the 100 mpg range. Not bad, but if gasoline hits $2 this year, the more mpg the better.

The 200 mpg is a reputed figure. While the companies don't want to get hit for false advertising claims, there is no EPA standard for mopeds at this time. Yet, I would be misleading you if I said anything other than that a prudent operator can stretch a moped's gasoline mileage further than the dealer is going to claim. As for $2 a gallon gasoline – what do you mean "if?" And you were talking about the mid-year figure and not the end of year price, weren't you?

Editor's note: Double Tech is a question and answer column in which DRIVER will attempt to make clear some of the cloudy subjects in readers' minds. Unlike other automotive magazine Q&A columns, Double Tech doesn't deal with specific questions such as, "Why is my Wink-Snoozymobile hard to start on rainy mornings?" Instead Double Tech fields questions that are of general interest to the majority of our readers. However, when sending questions to Double Tech be sure to include all available information because this will help in finding the correct solution. If you have a question you'd like an answer to, and you feel others could use the knowledge also, send it to:

Double Tech
DRIVER Magazine
HQ AFISC/SEDD
Norton AFB, CA 92409

As with most magazines, DRIVER has a long lead time between writing and publication, so don't be surprised if it takes several months to get a reply.

Professional motorcycle racer Mike Kidd will be sponsored by the U.S. Army again this year. As Mike said in the December DRIVER story "Rolling Billboard," the goal for 1980 has been set: "Hey, let's go racing! I'm going to be number ONE! If you're not on the gas tank, too bad!"

If you'd like to see Kidd race in his red, white and blue leathers for the Army, check out the American Motorcyclist Association's 1980 Winston Pro Series schedule for an event near you. Once you've seen Kidd handle the number 72 bike, you may get "number one fever," too.

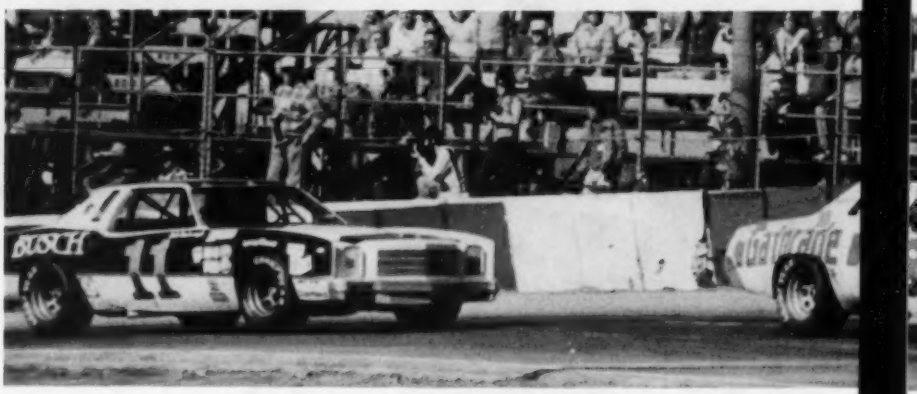
number one fever

1980 WINSTON PRO SERIES CALENDAR

Date	Location (Track)	Type Track
May 4	San Jose, Calif.	1 mile
May 10	Gardena, Calif. (Ascot)	½ mile
May 31	Louisville, Ky.	½ mile
Jun 7	Laurel, Md.	½ mile
Jun 20	Hinsdale, Ill. (Santa Fe)	Tourist Trophy
Jun 22	Columbus, Ohio	½ mile
Jul 5	Topeka, Kan.	½ mile
Jul 12	Castle Rock, Wash.	Tourist Trophy
Jul 19	Gardena, Calif. (Ascot)	Tourist Trophy
Jul 27	DuQuoin, Ill. (State Fairgrounds)	1 mile
Aug 1	Hinsdale, Ill. (Santa Fe)	Short Track
Aug 3	Peoria, Ill.	Tourist Trophy
Aug 10	Location to be announced later	1 mile
Aug 16	Cedar Rapids, Iowa	½ mile
Aug 23-24	Indianapolis, Ind. (State Fairgrounds)	1 mile
Aug 31	Pittsburgh, Pa.	½ mile
Sep 7	Syracuse, N.Y.	1 mile
Sep 21	San Jose, Calif.	1 mile
Oct 5	Gardena, Calif. (Ascot)	½ mile

Opening laps of the race after the green flag finally fell without the yellow found the cars running almost as they had qualified and faster than you can read the numbers: 88, 11, 43, 2, 15, 27, 48. . . . That's Waltrip, Yarborough, Petty, Earnhardt, Allison, Parsons and Gurney on the cross-over circuit from turn 6 to turn 8.

(right)
As the right rear tire begins to lose air, Wanda (#88) gets loose and doesn't handle as well going through turn 6. This, in turn, allows Yarborough (#11) to get close enough to set up a pass.

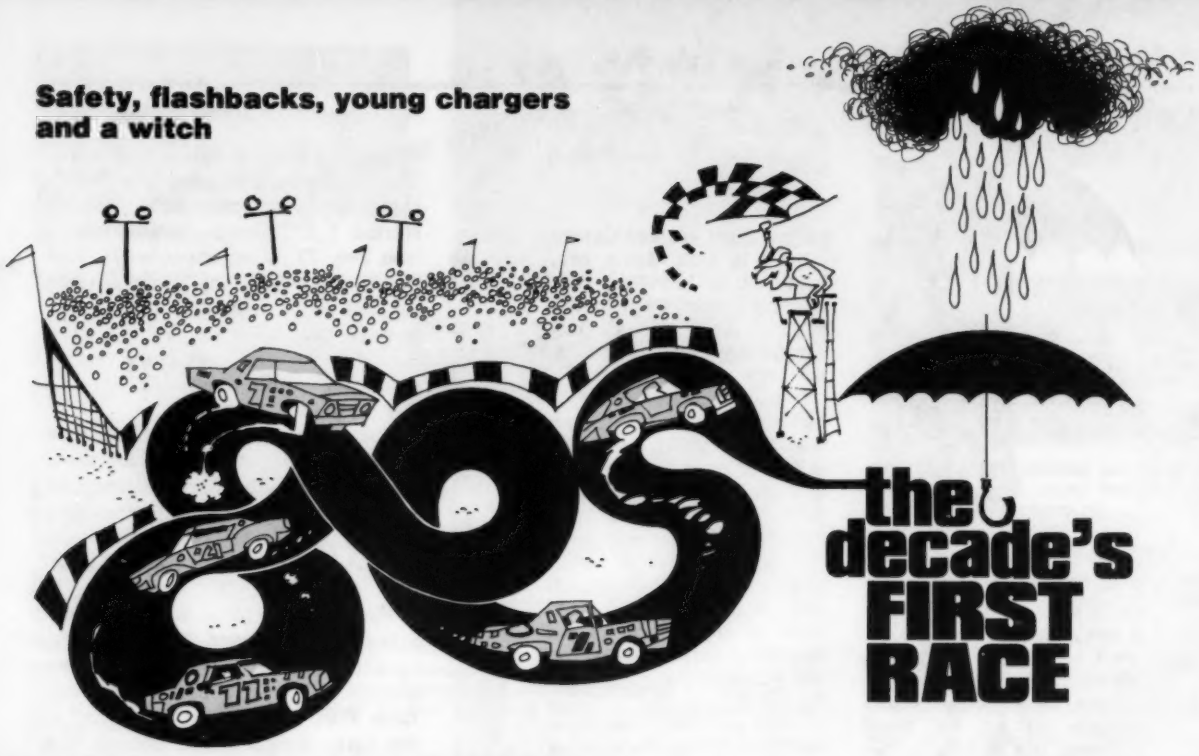


Snap the whip with Allison as the cracking end is the appearance given as the leading pack of five cars heads onto Riverside's more-than-a-mile-long back straight. The car that appears to be a quarter straightaway in front of the leading group is actually tail-end-Charlie and about to be lapped.

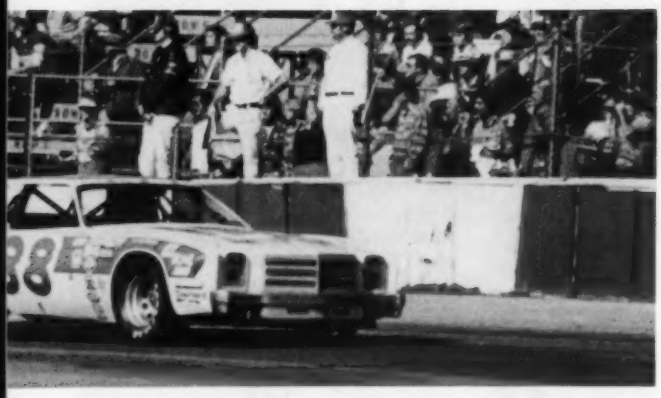
There were enough different stories during the running of the first major North American automobile race of this decade to keep Hollywood script writers in ideas for a year. Some of the major themes included safety, flashbacks, young chargers and a witch.

The traditional event for starting the National Association for Stock Car Auto Racing (NASCAR) and North American seasons had been moved ahead one week. This was to avoid a conflict between the 500-kilometer race at Riverside International Raceway and the Super Bowl just down the road in Pasadena. However, Mother Nature never coordinated on the date change.

Safety, flashbacks, young chargers and a witch



the decade's FIRST RACE



Thursday's practice was rained out. Off and on rain broke just enough Friday and Saturday to allow qualifying. Then Sunday morning the track was too wet for the stock cars and their treadless tires. Almost anything that would roll was pressed into service to dry the asphalt surface. This included pickup trucks, tow trucks, wreckers and a Rolls Royce. There was even a chauffeured Cadillac limousine complete with a man in a grey, three-piece business suit reading the weekend Wall Street summary in the paper. To top it off, Briggs & Stratton ran their new experimental, six-wheeled gasoline and electric car, Hybrid, around the track a few times, too.

As the scheduled start drew near, the helicopter of San Bernardino, Calif., businessman, Warner Hodgdon hovered over the damper portions of the 4.215-kilometer (2.62-mile) road course blowing the water off the track.

Nearly three hours late, 37 bellowing Grand National stock cars lumbered onto the track behind a much smaller Toyota Celica Supra pace car. Slowly the field ran several laps behind the pace car waiting for the flashing yellow lights to go off and the green flag to fall.

When the green came the pace didn't quicken. The noise didn't become more deafening. And the small Japanese car continued to run at the front of the field of American cars. Although the race had officially started, it had started under a yellow flag condition. There would be no passing. There would be no charging. There would be no high-speed dicing. There *would* be only one speed—that of the pace car.

Lap after lap the 37 American V-8s loped along behind the six-cylinder pace car. Lap after lap they lofted past fans and officials alike. Lap after lap officials around the course reported about track conditions. Lap after lap the drivers radioed messages to their crews. Lap after lap these messages were relayed to the officials.

Each lap the story would change. First there would be a drizzle in turn 9. Then it would be raining in turns 6 and 8. All the time the more than one mile long backstraightaway stayed too wet for racing.

Safety first: Finally the officials decided that the track wouldn't dry enough for safe competition. So after 24 laps the red flag was displayed, the field stopped, the cars impounded and everybody went home.

Any time an auto race is stopped because of rain the question of rain tires comes up. "Rain tires are used by road racers; why not oval racers?" is the general tenor of the interrogation of officials, crews and drivers alike.

Bobby Allison and Richard Petty faced this question after the Winston Western 500 was halted. Now, neither

continued

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How much safer would it be to drive on the highways if everytime it rained you did what NASCAR does at the races? Think about this:

First, send every "slow" vehicle that can be found out onto the streets to idle along and dry up the water. Then, just before *you* get ready to leave, send a helicopter ahead to blow away the puddles. Now you follow a car that has a flashing yellow light to warn other drivers to slow down, too. And you follow that car, which is driven by the world's most cautious person, until the roadway is completely dry and safe.

Also, if it should start to rain while you're on the road, that same cautious driver is going to pull in front of you again and force you to drive slower than conditions allow. In fact, if there is an accident up ahead or something has been spilled that may cause you problems, good ol' super-cautious will pop up in front of your car with those yellow lights flashing again.

Take another hint from NASCAR: When the weather is bad or there's trouble on the road, take a break. If nothing else, get in one of those long gasoline lines—they'll keep you off the road for awhile.

How about adding road surface drying to the job description for traffic helicopter pilots? Before the first race of the decade the helicopter of San Bernardino, Calif., businessman Warner Hodgdon hovers over a damp portion of the race track blowing water off the asphalt.

Pace cars establish safe speeds for stock car racers whenever there are problems on the track. Vehicles with flashing yellow lights and super-cautious drivers backed up with no passing laws might improve highway safety, also. What do you think?

of these drivers is easily frightened. They both pilot cars capable of traveling 200 mph. Combined, they've started 1,273 Grand Nationals and won 246, 77 on superspeedways. And they've both been any place a stock car can race—including upside down at more than 100 mph. Yet the question of racing stock cars in the rain invokes the response of, "That's the day we retire!"

This answer rings true throughout the driving ranks—even with those drivers more noted for their road racing than stock car driving, including Dan Gurney and the 1979 LeMans 24-hour race-winning Whittington brothers.

The Whittingtons, who normally drive turbo-charged Porsche 935s, agreed with their stock car racing cronies. They also pointed out that their Porsches, which are raced in the rain, weigh 1,000 pounds less than NASCAR stockers while riding on much larger tires. The weight and tire size difference allows for development of rain tires that are not possible for stock cars.

Prior to the race's restart the following Saturday, the crews reconnected the vehicles' batteries, checked fluid levels, changed spark plugs and added what fuel remained in their dump can when the race was stopped.

After two laps under the yellow, the field roared off. The race would be a sprint as they had less than 250 miles to cover before the checkered flag. The field slipped around the road course, taking the esses as if playing snap-the-whip and rocketing down that long, long back straight. Even with the twists and turns, the 50-mph boiler plate-lined turn 6, and the equally tight and tricky turn 8, the 3,700-pound, 500-plus horsepower cars were clipping laps at speeds averaging more than 110 mph.

They were running almost as they had qualified. In an order that sounds just like any NASCAR superspeedway race. Faster than you can say the numbers as they flashed past: 88, 11, 43, 2, 15, 71, 48, 27, 72. . . . There they were; the names, teams, sponsors and cars that make NASCAR racing close: Darrell Waltrip, DiGard/Gatorade '77 Monte Carlo; Cale Yarborough, Junior

No. 43, "King Richard" Petty . . .

No. 2, 1979 Rookie of the Year, Dale Earnhardt . . .

No. 72, former Petty crew member, Joe Millikan . . .

The witch, Wicked Wanda, was so stable that Darrell "Jaws" Waltrip could run as hard as he wanted anywhere on the track. In fact, Jaws and Wanda were driving around the high-speed turn 9 faster than most other competitors—so much faster that the winning duo ran into the rear of two other cars. Look at the front of Wanda (below) as she carries the entire DiGard crew to victory circle.

No. 11, Unprecedented winner of three straight NASCAR Grand National Championships, Cale Yarborough . . .

No. 15, a battered Bobby Allison . . .

and No. 48, international driving star from the '60s, Dan Gurney.

Victory brings a free ride for the entire DiGard crew from their pit area to victory circle. Although Wicked Wanda started life as a mid-size passenger car, she's spent most of her time carrying only one passenger—Darrell Waltrip.

(above)
Safety netting makes it difficult to see race drivers at work; however, it keeps their helmeted heads within the safety plane of the roll cage, preventing serious injuries. The speeds traveled by the NASCAR stockers also make identifying drivers difficult, so fans learn to recognize their favorites via legendary numbers.

Johnson/Anheuser Busch & First National City Travelers Checks '78 Monte Carlo; Richard Petty, STP '77 Monte Carlo; Dale Earnhardt, Rod Osterlund '77 Monte Carlo; Bobby Allison, Bud Moore/Hodgdon '79 Thunderbird; Dave Marcis, Stoney's Chevrolet '77 Monte Carlo; Dan Gurney, Osterlund/Theodore Racing Hong Kong, Frank Arciero & Sons, Lubri Lon (whew!) '78 Monte Carlo; Benny Parsons, M.C. Anderson/Melling Tool '77 Monte Carlo; Joe Millikan, L. G. DeWitt/Appliance Wheels '78 Monte Carle. . . .

Flashback: Dan Gurney? Wow, a flashback to the '60s when Gurney dominated this race (it was 500 miles and called the Motor Trend 500 then), winning it five times in six years. Actually it wasn't a flashback, but a stroll down memory lane for Gurney and the fans. Gurney had been an international driving hero in the '60s and his cars, called Eagles, had dominated Indianapolis-type racing from the mid-'60s until mid-'70s.

It had been 10 years since Gurney last drove a race, but with the help of Riverside President Les Richter, he landed this one-time ride at his home-

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town track. He even went back to driver's school to brush up. However, after qualifying was over, you can be sure there were 30 slower drivers who wished he had stayed completely retired and six faster men concerned about who was behind them.

After 26 laps of yellow caution, six days in the garage and four laps of racing, Gurney was still seventh. Parsons dropped Gurney and four others back a place in a charge to fourth place before a broken radiator hose sent him to the pits early. Gurney was sixth on lap 40, mainly at the expense of Allison who had pitted for a left front tire.

By the 50-lap point Gurney had moved to fourth place. One of those places had been picked up when Waltrip cut a rear tire, the other in a daring pass of his own teammate, Earnhardt, in the dirt between turns 3 and 4. Gurney pitted on lap 56, getting left-side tires and fuel in 22 seconds. At the end of 60 laps he was fifth. Then two of the cars in front of him pitted and he was third.

On lap 77, leader Petty pitted, leaving Gurney second, only 14 seconds behind the new front runner, Yarborough. But on the 80th lap, just as Gurney crossed the start-finish line, all the gears in the transmission were gone and his race ended in a coasting stop at turn 6.

Young Chargers: The Whittingtons, Bill and Don, finished their first stock car race in eighth and ninth places respectively, two laps off the pace. Don qualified his '78 Monte Carlo, sponsored by Hodgdon and California's Lieutenant Governor Mike Curb, ahead of Bill's Midwestern Farm Lines '78 Monte Carlo, but was slowed by a 90-second pit stop for shifting problems on lap 28.

Another name new to Grand National racing, but not to motor sports, was Lake Speed. The young 1978 World Karting Champion qualified his Speeds Investments '77 Olds 32nd. He was among 10 drivers who pitted at one time or another during the first 24 lap caution period and lined up 30th for the Saturday restart. He and two other drivers jumped into the pits on the first lap. Speed made a scheduled stop on lap 57, but his engine let go on lap 82 leaving him 29th in the final results.

The real youthful charger of the day, however, was Waltrip. Although Waltrip was the seventh driver in NASCAR history to earn more than $1 million and lost the 1979 Grand National crown to Petty by only a few points in the last race, he is still a young charger. He's a young charger because he's almost 10 years younger than Petty and has only been in Grand National competition since 1972 while Petty's been around since 1958.

Not only did Waltrip start on the pole for the first race of the decade, he won last year's version of the same race and was second in the NAPA 400 on the same track in June last year. He also won the International Race of Champions at Riverside in October 1979.

A witch: "Jaws," as Waltrip is called by his fellow drivers because of his outspoken off-track commentary, said that he should win the race because he led it for such a long time—a week. He was piloting a car he calls Wicked Wanda the Witch. Jaws and Wanda had out-qualified the field. They had held number one behind the pace car for those first 24 laps the Sunday before. And they continued to lead the two yellow pace laps of the restart.

When the green finally fell, the

continued

the overall picture

Ivan Borgwinkle and his wife just finished their Sunday afternoon meal and the dishes. They have planted themselves in front of the color TV for some sports entertainment. Football season's over, baseball hasn't started, so Ivan is expecting to see basketball. But instead it's live coverage of the Daytona 500.

After less than a minute of watching 40 or 50 stock cars roar around a 2½-mile tri-oval at speeds approaching 200 mph, Ivan has had it. Snapping off his set, Ivan yells at Sarah, "If they weren't drivin' around in circles for 500 miles I could get gas at the corner station and, and, and it wouldn't cost a buck 'n a half a gallon, neither!

"Com'on, let's get in the four-by-four an' go. Right now I don't care where, I jest wants to get out an' drive fer a couple hours! Boy, am I mad at them fellahs fer wastin' fuel!"

Race track gas stations have their long lines, too. However, instead of cars, 15-gallon dump tanks wait for filling with 103½ octane gasoline.

If you agree with Mr. Borgwinkle let's look at what would happen if racing were shut down. I mean stop all motor sport racing in the country from Daytona to Indy, from Watkins Glen to Long Beach. Everything, including that little bull ring track up the road from you, whether it is Spud Speedway in Caribou, Maine; Magic Valley Speedway, Rupert, Idaho; Orange Show Speedway outside the gates of Norton AFB, here in Southern California, or Daytona International Speedway in sunny Florida. Stop it all.

How much gasoline would be saved? According to Bill Brodrick of Union Oil Company all racing in the United States

what a gas!

Is there a difference between racing gasoline and the unleaded fuel you buy at the corner station?

Yes, and no.

The unleaded you buy at the corner station probably has an octane rating of about 87 (91 for super unleaded). If Union 76 racing gasoline pumps had octane ratings posted,

Slower drivers move to the inside of the track to allow the hot chargers room to race. Approaching Riverside's turn 9, Dick Brooks moves over as Waltrip passes with Yarborough in tow.

down to and including the smallest tracks uses the same amount of gasoline in one year that the average corner gas station pumps in the same time frame. And Brodrick should know because Union is the largest supplier of racing gasoline in the country.

Now, if you still think you'd notice the difference at your corner gas station were all racing stopped, think again. You'd notice it about as much in Chicago as you would notice the closing of a single gas station in Los Angeles—not at all.

Major race tracks have their own gas stations. They are treated just like any other gas station by the major oil companies. The law says so. They are treated just like any customer. Race track gas stations are allocated gasoline based on a percentage of their 1978 pump figures as is any station in the country. Right now that runs about 80 percent of what was pumped in 1978.

How they pump that fuel is up to the individual tracks and race sanctioning organizations. No one has forced them to take any action, but they have. Most tracks and organizations have cut back on practicing time in addition to shortening race lengths. They also restrict the hours that fuel will be pumped. Before, during periods of no allocations, the track gas stations opened when people went to work and closed when people went home. Today they almost appear to have "bankers' hours" instead of racing mechanics'.

Automobile racing is a highly visible consumer of gasoline. Yet the amount of fuel used in front of the TV or crowd is a drop in the fuel tank. As with most sports and forms of show business, the main consumer of fuel is the customer driving to and from the event.

they would read 103½. The numbers posted on the corner gas station pumps are Cost of Living Council (CLC) octane numbers. They are obtained by adding the motor octane number (MON) to the research octane number (RON) and dividing by 2.

Racing gasoline is, of course, leaded not unleaded. It is in essence chemically the same as premium gasoline sold to the public. The basic difference being volatility. The same chemical components are blended in different amounts than normal gasoline. This blend allows an engine to operate under continuous high speed and high temperature conditions without vapor lock.

If you're wondering why any company would go to the extra trouble of mixing racing gasoline, ask Union's Bill Brodrick. He'll tell you Union wants people to be confident in their products to do the job.

continued

Traffic is heavy on Riverside's pit straight. The fastest route around the road course is darkened on the pavement with rubber and oil. Cars exit turn 9 running right up to and sometimes into the concrete wall on the left. They then cross to the right-hand side of the track near the start-finish line and drive full throttle through turn 1. The pit entrance is on the right. What appear to be small stones along the wall at the exit of turn 9 are actually chunks of rubber from the racing tires.

green and white #88 witch pulled out a small lead over Yarborough's blue on blue #11 Olds. Then Wanda ran over something with her right rear tire which cut the rubber. The tire began losing air. On lap 36 Yarborough took the lead as Wanda began fighting the lowering tire pressure to get traction. On the next lap Waltrip was dropped to third by Petty. By lap 46 the tire was nearly flat causing Jaws and Wanda to fight for control. Afraid to go all the way around turn 9, Waltrip bypassed the backstraight dogleg, drove around the end of the garage area and pitted by the "backdoor."

It took only 32 seconds to change all four tires and add fuel, but as Waltrip was preparing to exit the pits and rejoin the race he was stopped by NASCAR officials. They held him up an additional 30 seconds as a penalty for taking the shortcut to the pits. This left him a full lap off the pace—but not for long.

In turn 1 on lap 55 Waltrip passed the leader Yarborough to unlap himself. However, he still had to make up the distance of a lap (2.66 miles) plus pass the competitors running in front of him. He got additional help at this point as many of the front runners were beginning their first scheduled pit stops.

At 60 laps he was ninth. Ten laps later he was sixth. Then Waltrip and many of the leaders ducked into the pits for the second time. Wanda got left-side tires and fuel in 15 seconds.

The biggest break in Waltrip's run to the front came on lap 82 when the yellow flag flew because of Speed's engine problems. This allowed Waltrip to move within striking distance of the leaders. The order as the green came out again was Yarborough, Petty, Allison, Millikan, Earnhardt and Waltrip.

By lap 90 Jaws had dispatched Earnhardt, Millikan and Allison. Five laps later he was .8 seconds behind Petty and 5.3 seconds out of first place. Within two laps he was past Petty and on the next lap took the lead as Yarborough slowed with distributor problems.

Although he was planning on running the rest of the race without stopping, Waltrip stopped on lap 110 for five seconds while Wanda took on fuel because Petty had pitted for 14 seconds three laps earlier. Petty's pit stop provided Waltrip with what he thought was a good cushion to hold the lead during his final stop.

What he hadn't noticed was that last year's Rookie of the Year, Earnhardt, had closed to within less than a second with only six laps remaining. When he did notice Earnhardt he began to worry. But Wanda was up to the job. Being able to pull out a lead on Earnhardt down the backstraight and through turn 9, Waltrip stopped worrying and won the race by almost three seconds.

"She's Wicked Wanda of the West now," laughed Waltrip, "She told me she likes the West."

Finishing behind Waltrip were Earnhardt, Petty, Millikan and West Coast driver Bill Schmitt in a '78 Olds. Among those lost along the way were, of course, Gurney and Yarborough; Allison (blew the engine on lap 109), and Parsons (transmission problems on lap 52).

If there is a good time to have a flat tire during a race, Vince Giamformaggio found it. His right front tire let go right after the checkered flag fell.

Timely Topics

BRAZILIAN AUTO MAKERS BUILD CARS THAT RUN ON PURE ALCOHOL

Cars designed to run on pure alcohol are now being built in Brazil, a nation that has declared its intention to replace foreign oil with domestically produced alcohol made from sugar cane during the 1980s.

Volkswagen, the largest producer of cars sold in Brazil, is turning out 50 alcohol-powered cars a day at its massive plant in Sao Paulo. Fiat, an Italian automaker that is also a major carbuilder in South America, recently announced that its plant in Belo Horizonte, about 200 miles from Rio de Janeiro, has begun building alcohol-powered cars at a rate of 200 a month. Ford has come out with an alcohol version of its U.S.-built V-8 engine, one of which now powers the official car of Brazilian President Joao Figueriredo.

The engines of the alcohol-powered cars are specially treated to resist corrosion and the carburetors are adjusted to handle high-octane.

Officials in the Brazilian government call the alcohol program "the one practical solution to the energy crisis." All cars in Brazil, other than the pure alcohol models, now run on a gasohol mixture of 20 per cent alcohol and 80 per cent gasoline.

(Traffic Safety)

DOT DEVELOPS NEW DUMMIES FOR CHILD RESTRAINT TESTS

As part of its efforts to improve the safety of children riding in cars, the U.S. Department of Transportation has developed new test dummies for use in testing of automobile child restraints.

Until these dummies were developed, the models used were relatively crude in structure and did not provide a reliable measurement of what would happen to child occupants in a crash.

"The new test dummies more accurately duplicate human response in a crash and give a better indication of how much crash protection a particular child restraint will provide. The dummies are objective testing devices that produce dependable results," National Highway Traffic Safety Administrator Joan Claybrook said.

On Dec 13, 1979, NHTSA published a revised standard for automobile child restraints, Standard 213, which requires simulated crash testing of the devices. The new test dummies are necessary to help meet more demanding performance requirements for the safety seats themselves.

Safety devices recommended for children weighing 20 pounds or less will be tested with an anthropomorphic (human-like) dummy representing a six-month-old child. Restraints for children weighing from 20 to 50 pounds will be tested with a dummy that is similar to a three-year-old child.

Motor vehicle crashes are the number one killer of children between the ages of one and 14 in this country, accounting for about 4,100 fatalities and several hundred thousand injuries every year.

Federal Motor Vehicle Safety Standard 213 has been revised to cover all types of systems to restrain children in motor vehicles, such as infant carriers, child seats, harnesses and car beds. It replaces the current stationary testing of child restraint systems with 20 to 30 mph simulated crash testing of the devices beginning June 1, 1980.

A PLUG FOR GOLD?

The manufacturers of Champion Spark Plugs have another use for gold. "Gold paladium is very strong in the hostile environment that a spark plug goes through," said Eugene Hogan, a spokesman for the manufacturer. Most Champion standard spark plugs rely on nickel rather than gold, however.

Champion gold paladium plugs are used primarily in motorcycles and snowmobiles, he said. Some racing car drivers use them and a few foreign cars, such as the Audi, rely on them.

HOW IT HAPPENS!

There will be no cute 'quizzes.' This is really "how it happens."

Five airmen, all age 20, are in a car travelling on a wet two-lane road. After taking a gradual left curve in the road, the car veers across the center line and is struck head-on by a 7-ton truck. One airman is thrown from the car and dies instantly. The other four are burned beyond recognition when the car explores and burns.

The car is known to have had two bald rear tires, a rear wheel out of balance, poor steering, a left front door that would not stay closed all the time, and a driver's seat that slipped on its track.

Post mortem tests show the driver with a blood alcohol level of over .2 (.1 BAL is legally intoxicated), and the others with BALs of .2, .08, .1 and less than .01.

What's *your* guess?

A good bath is as much a part of spring for your motor vehicle as Easter is for you. The cleaning starts with lots of hot, soapy water pushed by high pressure.

THE BACKYARD MECHANIC

SPRING CLEANING

Motor vehicles communicate with one another. The Backyard Mechanic knows this to be a fact. What may sound to you like obscene grunts and groans are actual conversations. (Some of these communications have even been mistaken for metal parts cooling down.) While you are certainly allowed to continue thinking these noises are just racket, the Backyard Mechanic knows better.

Let's listen in on a conversation between a shiny metallic blue Camaro and its dirt-covered parking lot companion, a gold Trans-Am. For some reason these two always end up beside each other in one of the empty corners at the lot's far end. The Camaro always takes up at least two parking spots, sometimes crowding for four (see "Sparking Plots," June '79 DRIVER and "Backfire," September '79 DRIVER). If the Backyard Mechanic didn't know better he'd say these two's clandestine meetings might lead to an offspring in the form of a smaller General Motors F-body (Camaro, Firebird) in 1982.

Oh yes, I almost forgot, their conversation:

"Hi there, big boy," the Camaro coos.

"Mornin' beautiful," the Trans-Am answers.

"Can I ask you something personal, you big hunk of Machoism?

"Of course," replies the T-A trying to retain some form of cool and composure.

"How long has it been since you've seen the inside of a car wash?"

"Haa, gad!"

"I mean . . . I know it's been cold all winter. Especially since that turkey who rides in you leaves you out in the night without protection. But, but . . . um . . . but you're getting to smell something fierce. And those salt stains under your wheel wells, gad-Zeus. You're losing your golden, macho appearance. You're really going to the pot holes, man."

As long as you're at the car wash, take that power vacuum and give the floor and seats a complete dirt and dust brush-off.

"You're gettin' to sound like that old four-by-four," the T-A sputters as it obviously is losing its cool. "He was a real fiend for water. Wasn't nutin' for him to go and take two, three runs through the creek a year."

"Yes, that old four-by-four. Almost forgot about that one. I told 'im not to run so fast on those icy mountain roads."

"We're goin' ah have to have him towed away."

"Yes, we keep puttin' it off."

"Ever occur to you, might be the

Hitting every inch of the inner wheel wells, particularly along the insides of the fenders as well as along the seam between the main body and fenders, is extremely important to spring cleaning.

Use a bucket to help conserve water when hand-washing the car. While you can invest in expensive special car body soaps, most mild dish soaps work just as well.

old four-by-four that's beginin' to smell . . ."

"Boy, you'll do anything to get out of that car wash, won't yah?"

Apparently these conversations carry over into some kind of communications with the owner, for on the first balmy afternoon of spring you'll see cars everywhere getting their first bath of the new year. For others it may be their only bath of the year, while still others go untouched.

There are several reasons to wash your vehicle. For some people, pride of ownership is enough. Still others want to find out if the blue car they bought last year is really hiding under that brown car they've been driving all winter. If nothing else inspires you to wash your vehicle, remember it needs a good bath after a long winter. This is especially true in snowy climates where tons of salt get dumped on the roads each winter. Lots of that salt ends up on your machine and literally rusts it away if you don't wash the chemicals off.

For you snow-country people it is very important to desalt your vehicle as soon as warm weather arrives. Salt has had an entire winter to build up in hard-to-get-at areas that are extremely vulnerable to rust. These areas include the rocker panels, wheel wells and underneath the body. The best way to tackle cleaning the chemicals off and out of these areas is at a commercial coin car wash. Here a quarter or two gets you five minutes with a high-pressure spray gun. Be sure to pick a car wash that has lots of hot, soapy water with plenty of water pressure—you'll need them to get rid of salt.

Although it is important to get the visible outer surfaces of the machine clean, it is even more important to get at those areas you can't see. Take the spray gun and hit every square inch of those inner wheel wells, particularly along the insides of the fenders and along the seam between the main body and fenders. Also do your best with the spray to get the entire underside of the vehicle. Attack it from the front, back and both sides.

In most cases the spray guns will take away the salt and grime. However, some good old fashioned scrubbing with a thick sponge and hot, soapy water is going to be especially helpful on lower body panels where directing the water spray is difficult. Once you flush the salt and grunge off the surface, you can head home and finish the job with the inexpensive bucket of water and sponge. We're going to be talking a lot about fuel conservation in future months, but don't let this blind you to other conservation programs such as water. Where possible, use a bucket and not an open running garden hose. On the other hand, don't be too conservative with your own physical energy—most people can use the exercise.

Be careful with that sponge near any sheet metal edges of the body—they can give you a nasty cut.

Now the snobs may get out their fine chamois for drying while the rest of us use big bulky towels. Either way, the idea is to remove all water and water spots. As you have gone over the entire vehicle's surface, you've probably noticed some places where the paint is chipped or scratched. This is the time to get them taken care of—they too can be a point for rust to start.

continued

TROUBLE-FREE AND SAFE MILES

Spring cleaning is the perfect time for a semi-annual mechanical inspection. This will help make the miles ahead fun, trouble-free and safe.

Tires

How much tread is left? Do they need to be replaced? Is the wear uneven? If so, do they need alignment or balancing?

Lights

Do all the lights work properly? Are the headlights aimed correctly? (See February '80 DRIVER)

Engine

Is it in good tune? Are the filters fresh? Is the emission system working as it should?

Wipers

Do they streak or stick? If so, replace them. Is the windshield washer filled and working correctly?

Cooling System

Is it filled to proper level? Are the hoses in good condition and properly clamped? Does the thermostat work as it should?

Battery

Clean? Dry? Does it have the correct amount of water? How are the connections?

Belts

Are they in good condition with correct tension? Do you have spare fan/alternator belts in the car?

Brakes

Is the master cylinder topped off? Do brakes operate properly? Did you inspect the shoes and/or pads? When will they need replacement? Are there any leaks?

Automatic Transmission

Has it been shifting properly? Is the fluid level up to full? What color should the fluid be as opposed to the color it is?

Transmission Differential

Are the lube levels right?

Exhaust System

Is it quiet? Are there any leaks or weak spots?

Shocks, Wheel Bearings, Front End

Does the car ride smoothly? Does it handle like it was new? Does the steering respond to you? Are any of the bearings making noise?

(far left)
It takes several hands to carry some of the things many people will use to get a shiny finish on their cars. For example, this clown has a can of paste wax, a deep cleaning liquid wax, a handful of Turkish towels for applying coats of everything, a towel mitt for "his special touch" and a can of chrome cleaner. And this is just his first load.

(near left)
Household dust-and-wax polishes work very well for cleaning the inside of your vehicle.

(far left)
To brush or scrub? To go into the arguments pro and con would take more than a single issue of DRIVER can cover. Nevertheless, both require safety minded useage or you end up damaging the vehicle's finish and your flesh. Remember, safety is nothing more than thinking, "What happens next if something goes wrong?"

(near left)
Chips and scratches should be touched-up as soon as they are noticed. On the other hand, tackling a complete wheel well job with a $1 dress-up tube of paint is like attempting to write an insult to a magazine, you may get in the first shot but after that you're out-gunned. Pick the right size tool for the job.

Don't dash to the parts store and grab a can of touch-up spray paint. If you do, you'll have to sand and prepare the entire area you're touching up. Then when you're all done its finish will look worse than when you started – unless you're a real pro or extremely lucky – which I haven't been.

The only simple method to touch-up the chips is to dab them. Yes, dab. You must first get a small touch-up applicator, kit, tube, what-have-you, from a dealer or parts store. (Any time you have the car repainted, try to get a small can of the paint used so that you can do future touch-ups.) If the touch-up paint you get doesn't have some kind of application device, you'll need a small paint brush such as artists use. In addition, you'll have to have special wax and grease remover.

To prepare the chipped area for painting, wash it with soapy water. Dish soap works fine, but strong detergents are harmful to the finish. After rinsing and drying the area, use the wax and grease remover to get rid of any gunk that's in the chip, otherwise the paint won't take. You may even need a toothbrush to get down to the chip.

After the area is completely dry, dab the paint into the chip. On large dings you'll have to build up the dabs in layers to completely cover the area. After the paint dries, rub it down with rubbing compound so it matches the rest of the body finish. Then throw on a good coat of wax.

Remember the new paint may not quite match the original because the weather has faded the finish. Also, metallic paints are impossible to match, so don't expect too much.

OK, now we've got the outside of the car ready to be cleaned, You heard right, it is ready to be cleaned. All we've really done so far is work our way down to cleaning level.

There are numerous cleaning aids available. You can check the shelves at your local BX service station and/or department store. There you can read the labels until you find what sounds like it'll do the job. Or you can go to an auto parts shop and get one of the experts behind the counter to make a few recommendations. Either way you'll find there are as many cleaning aids as there are oils. The big difference is that most of the cleaning aids work almost as well as their ads claim they do. All you need to do is follow the directions.

A soap designed for washing cars is good, although most people find that the waxes with built-in deep cleaners work just as well. If the bugs or tar are very heavy, then you may want a special product to remove them. Chrome cleaners and polishes add an extra gleam to any bright-metal finish. If your vehicle's finish is old or oxidized, a good rubbing compound is called for. And finally, there are polishes and wax. Remember, a polish only brightens the finish, whereas a wax also protects the surface.

And again, they are all basically very simple to use, provided you follow the instructions.

Since your vehicle does have surfaces other than the painted metal ones, you'll probably also be investing in the newer products that deep-clean and protect them. Vinyl tops, convertible tops, weather stripping, tires, etc., all add to the beauty of your machine when they are cleaned properly. As always, overstating the advice to "follow instructions" is impossible.

By the way, if those tires have white sidewalls, a soap-filled scouring pad or steel wool and hand cleaner will improve their appearance.

Once inside the vehicle it is back to warm water and a mild soap. It's usually a good idea to vacuum first. While the special automobile interior cleaning products normally produce a nice sheen, regular household-type dust-and-wax polishes are just as effective.

On the other hand, nothing is ever a sure thing, as the Trans-Am's about to find out.

"How's this, Cam?" the T-A asks, glistening in the sun as if it were actually gold instead of paint.

"Wonderful," sighs the Camaro, "now if you could just do something about that gas on your breath. . . . ☮

"OK handsome," coos the Camaro, "now that you've taken a bath, do something about your gasoline breath. You must consume a dollar's worth just getting started in the morning!"

Flightline driving requires extra care and caution to avoid accidents that could impair the Air Force mission. The amount of maintenance equipment and number of personnel on the flightline mean drivers must be constantly alert for hazards.

Outer safe driving limits on flightlines are usually as well marked as open roads. And the basic rule of driving to the right of the yellow line while staying between the white lines applies.

Driving toward any aircraft should be avoided unless your vehicle is required to service, load or refuel that bird. If you are required to drive toward an aircraft, pre-position chocks to prevent your vehicle from striking the plane.

Flightline Driving

Where even 5 mph can be costly

We all know somebody like A1C Charlie Wiggins Thorndike III, even though I just made up his name. Although it's not really important that Charlie is an aircraft maintenance specialist, you do need to know that he works and drives on the flightline.

You've seen Charlie many times. (He's from Texas, so don't call him "Chuck," because he'll let you know his name is "Charlie.") He's eager to learn and even more inclined to lend a hand. Recently, he was a little too willing to help.

He was working in transient alert when a request for a maintenance stand came in. Noting that his supervisor and co-workers were busy, Airman Thorndike took on the task. Using a warehouse tug he picked up a B-1 maintenance stand at base operations and drove directly to the aircraft. Approaching the aircraft's nose diagonally, Charlie hung a right turn while traveling much too fast. Because he hadn't installed a safety pin, the stand separated from the tug and struck the bird's radome and fuselage.

Airman Thorndike wasn't hurt. Neither was the tug. And it took only five hours and $112 worth of parts to repair the maintenance stand. However, the aircraft required six hours to repair and $10,933 worth of materials!

The total cost of Charlie's using equipment for which he wasn't licensed and qualified: $11,133.

In another case, a pickup truck driver and his passenger both fell asleep while on mobile patrol. Although neither was hurt when their pickup destroyed itself against a bomber, the loss totaled $10,500. That breaks down to $4,147 for the truck, plus seven hours to repair the bomber with $6,297 in parts.

If this doesn't give you the idea that even 5, 10 and 15 miles-per-hour flightline speed can be dangerous, consider Ivan Borgwinkle, another fictional name. As a civilian flightline worker, he was backing his tug up to tow an aircraft. Somehow, his foot managed to cover the gas and brake at the same time.

Depending on which of the tug-backing accidents we're talking about in 1979, the costs ranged from $488 for a tug alone to $1,088 for the tug and aircraft.

And then there are injuries. "Injuries!!!??? How can anybody get hurt at those speeds!!!??? you demand.

"Very painfully" is the answer.

For example, a staff sergeant was reclining, taking a smoke break, and got contusions to his right leg when he was run over.

Or an airman first class received contusions to his right knee when he hit a cable while not looking where he was driving.

(left)
Although rules vary with local requirements you should never be closer than 10 feet to any parked aircraft and always stay outside the safety circles unless your vehicle is required at that airplane. Other distances (which are often increased by commands and local rules) include not being closer than 25 feet in front of or 200 feet to the rear of an aircraft with its engines running.

A wing may provide some nice shade on a hot flightline, but vehicles should NEVER be under any part of an aircraft.

When your vehicle is needed for servicing, loading or refueling an aircraft and you have to be within 10 feet of the bird, use spotters to help you reach your position safely.

Another airman first class ended up with lacerations of the back and both hands when he tipped over his fuel truck. Drinking at a picnic before going on duty probably didn't help his speed judgment.

Or there's a technical sergeant who fractured his left wrist and some ribs when a bomb lift hit the stand he was working from and tossed him down—hard.

Going into the total costs to us, the taxpayers, because of accidents such as this on the flightline is fruitless. Not because we don't care—we do(at least I do everytime I read the deductions on my leave and earnings statement)—but because it is so hard for individuals like you and me to relate to figures in the hundreds of thousands of dollars. Or should I say, "big bang bucks"?

On the other hand, these are not isolated incidents. In fact, there were 136 flightline accidents in 1978—88 involving specialized vehicles and 48 with other government machines. And we didn't do much better in 1979. There were 126 reported flightline accidents; 91 specialized and 35 general purpose vehicles.

Before you start jumping up and down, demanding that something be done to curb flightline accidents, consider the guidance that already exists. There is a regulation covering flightline driving—Air Force Regulation 127-101. In addition, almost every flightline job has a technical order covering the best and safest means of completing the operation (such as TO 00-25-172 on refueling and defueling).

But as with any safety program, written words are never enough; never will be enough. It takes a personal commitment from each and everyone involved to make a safety program work.

There's a basic logic to almost all the flightline rules and regulations. Violation of this basic logic has led to almost all of this year's incidents. What's this basic logic? Look where you, your vehicle and whatever might be in tow are going or could possibly go if something went wrong. If this path is on a collision course with anything—a door hook, an unusual lump of snow, an aircraft, or even a portion of a hangar—it's time to stop. Stop and insure that that collision doesn't occur.

Check the complete path for hazards and use spotters. Above all, look and see the possible hazards. Of course, you must also look and be seen for you, too, can be the object of a collision. Flightline vehicle operations shouldn't and don't have to involve hurtsville. Make the commitment.

By TSgt Ron Lathrop

While there are numerous places available to post speed limits on streets, the same isn't true on the flightline. Remember the basic flightline speed limits are: 15 mph for general purpose vehicles; 10 mph for special purpose vehicles; and 5 mph whenever you're close to an aircraft.

Flightline photographs accompanying this article were set up under the direction of ground safety and maintenance officials. All safety violations represented in these photographs are *deliberate* and must be *avoided*.

BACKFIRE

LETTERS to the EDITOR

WRONG-WAY RIDING

This letter is probably an exercise in futility, but because of my strong feelings on the subject I am writing anyway.

As you pointed out in your "Backfire" comments in the January 1980 issue, pedestrians should, where feasible, walk facing traffic. Contrary to the opinion of several experts quoted recently in your magazine, the same is true for bicycle riders. Granted this is illegal in many places, but leaving legality aside for the moment and addressing practical facts, a major factor in many traffic accidents is the speed differential between the vehicles involved. Bicycles do not maintain a speed which is compatible with motorized traffic in most instances and should therefore be operated in a manner similar to pedestrian traffic. Bicycles should not be considered motorized vehicles (unless they actually are motorized) and should not be operated in the same manner as motorized vehicles. Regardless of how many laws are passed, it is sheer folly to mix slower bicycle traffic with faster vehicles and not expect accidents to happen.

The sooner our lawmakers realize that bicycles are not motorized vehicles and revise our traffic rules accordingly, the better off we will all be. Bicycles should be segregated from motorized traffic where possible. When this cannot be avoided, bicycles should be operated at the extreme edge of the road or street facing traffic so that evasive action can be taken when required. The current situation where bicycle riders have their backs to on-coming traffic means that they often aren't aware of crisis situations until it is too late for them to react. This situation is compounded by the fact that motorists often do not realize the "closing speeds" involved and are forced to interfere with other traffic while trying to avoid slow-moving bicyclists. If the bicycle rider is facing on-coming traffic he at least has a sporting chance to get out of harm's way.

As a matter of information, I own and operate a 10-speed bicycle (as do my wife and children) so my perspective is not one-sided. I ride almost everyday and love riding. But that doesn't change the fact that bicyclists are not motor vehicles and should not be operated as if they were.

Mike Cline, USAF
Kelly AFB, TX 78241

The people who have made a study of the matter say that the cyclist cannot *see hazards better when riding against traffic. In fact a study done 4½ years ago by A. F. Williams shows 25% of all accidents involving bicyclists over 14 were caused by "wrong-way" riding. Laws in all 50 states require cyclists to ride on the right. Among other problems, there are no rules or legitimate paths for a left-side cyclist to follow in an intersection. (For more information, see "Why Cyclists Should Ride With Traffic," Sep '79 DRIVER.)*

AFTER DARK DRIVING

I am presently stationed at MCAS, Cherry Point, and enjoy reading DRIVER Magazine each month. Within the pages I have found many informative and interesting articles.

I read with much interest the article in your December issue, "How Well Do You See After Dark?".

After having logged thousands of miles in both government vehicles and my own POVs, more than two-thirds of the same were put in after the sun went down.

When I completed this particular article, I thought to myself about the hours I have put in on the road after dark either driving to a new duty station or just on the swoop home. I can't help but remember the help the old CB radio was on those long, dark, endless voids of roadway. At the other end of the wavelength would respond the voice of a lonely trucker on his way home after a crosscountry run, or the authoritative voice of one of the state's finest, passing the wee morning hours on channel 19. Yes, the "trucker's joy," noise box, or just plain old "CB" definitely has its advantages on the swoop.

One word of caution, if you have to make a choice between the CB and "NODOZ," one hand on the wheel is a whole lot better than ending up in the middle of a corn field because of the effects of what I simply will call "LEGAL SPEED."

DRIVER, keep up the good work.

LCPL Douglas D. Moore, USMC
45 Bogue Court
Havelock, NC 28532

PROTECTIVE DEVICES

PR2 Bruce Davison's letter in the January issue didn't go far enough. The following is food for thought:

Automatic restraint systems, 5 mph bumpers, motorcycle safety helmets, and other protective

devices may not be a cure for poor driver performance, but they sure beat the devil out of being dead.

In our permissive, do-your-own-thing society with its personal freedom concept, the only alternative to injury/death in vehicles is protective devices. Whether they be mandatory or acceptable, like them or not is immaterial. Training is certainly not a solution, especially when you think in terms of how to educate five million alcoholics, 20 million mentally disturbed and 100,000,000 others that already know it all. Training helps but is minor when we think of the total picture.

Perhaps we should take lessons from the astronauts – years of mandatory training combined with an almost foolproof safety system.

Foolproof systems in automotive engineering certainly will not improve driver performance nor stop accidents. However, it is a foregone conclusion that severe injury/death can be drastically reduced by these systems. Nothing else – not education nor enforcement – can even come close.

Mr. C. K. Akins
Safety Manager
Marine Corps Supply Center
Albany, GA 31704

C. K. points out a fact we probably don't emphasize as often as we should: There are many, many incompetent drivers on the road who can get you in trouble. That's why so many race drivers feel safer on the track than on a public street.

DRINKING DRIVERS

I can understand the frustration that SSgt Waddel expressed in his letter on drinking drivers in your January '80 issue, but I do not agree with his contention that harsh penalties are the answer to the problem. Behavior will not change without a change of attitude. Nor do I agree that nothing is being done. The Navy is dealing effectively with this issue through a program called NASAP, the Navy Alcohol Safety Action Program.

Established in 1974 with the pilot class run at Pensacola, Florida, NASAP was developed under the direction of the Chief of Naval Personnel in association with the University of West Florida, and in cooperation with National Institute for Alcohol Abuse and Alcoholism (NIAAA) and National Highway Transportation Safety Association (NHTSA). NASAP is a 36-hour, non-traditional bilaterally designed educational course on alcohol and life choices which focuses on the whole person. Designed for the alcohol misuser who has experienced some crisis due to abuse of alcohol (DWI, public drunkenness, etc.), it is presented in 12 modular class sessions conducted after normal working hours.

NASAP offers civilian judges and commanding officers an alternative and/or complement to punitive action for alcohol-related offenses. Screening is an integral part of the design ensuring that the alcoholic (20% of those referred) is screened out and referred to appropriate treatment. The 80% screened into NASAP classes have a recidivism rate of less than 10%. The Navy Alcohol Safety Action Program is growing at a rapid pace, open to all active duty and retired military as well as dependents and DOD civilian personnel. Over 36,000 students have graduated as of September 30, 1979. There are currently 35 sites throughout the world that offer NASAP classes with several more sites in the developmental stages at the official request of fleet and shore commands.

Anyone wishing further information about the Navy's program is encouraged to contact the Headquarters at Autovon 958-2127 or write to the address below:

Navy Alcohol Safety Action Program
Box 80
Naval Station, San Diego, CA 92136

In June 1977 DRIVER ran a superb cover article on NASAP. The issue is now included in all information packets we send out to publicize our program. It is my hope that this letter will be of interest to those who may not have seen the June 1977 issue.

Thank you for your support.

CDR G. A. Bunn, USNR
Commanding Officer
Naval Alcohol
Rehabilitation Center
San Diego, CA 92136

ICE RACING

I thoroughly enjoyed Carol Clewley's article about ice racing, but I noticed one error. The CJ2 was not built in 1944 – the MB was, but production ended in 1945. The CJ2 was built between 1946 and 1949. Thanks again for a great story.

Sp5 Winford Moore, USA
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it's SPRING!

You can smell it in the air?

Do your tires have enough

The birds are whistling a happy tune.

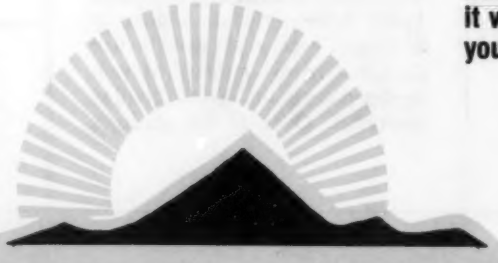
Is your engine in

Time to spring clean?

Are your filters

Because summer is slowly drawing near.

Driving in spring might mean more gas for summer fun

SPRING—the season that lovers love!

your car—
treat it right and
it will serve
you long and well